What really happens when we "ignore" the decimal point in multiplying?

1 . 4	x10	1 4 .
x 2 . 5	x10	x 2 5 .
.		2 0 .
.		5 0 .
.		8 0 .
+ .		+ 2 0 0 .
3 . 5 0	$\div$100	3 5 0 .

In the above example we multiplied both factors by 10. This means that the resulting product has been multiplied by 100. To compensate for this we need to divide by 100 to obtain the correct product.

Remember: Multiplying by ten moves the digits up one place. Since that has been done twice the digits of the product have been moved up two places. Therefore they need to be moved down two places to correct for that.

In the next example we multiply one factor by 100 and the second by 10. The product will have moved three places to the left. We will need to compensate by moving it back three places to the right ($\div$1000).

3 . 1 2	x100	3 1 2 .
x 4 0 . 5	x10	x 4 0 5 .
.		.
.		.
.		.
+ .		+ .
1 2 6 . 3 6 0	$\div$1000	1 2 6 3 6 0 .

Cornelis de Groot, Ph.D.